

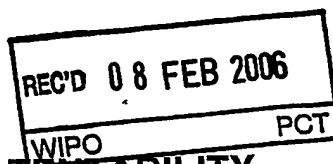
# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)





|  |  |  |                     |
|--|--|--|---------------------|
| Applicant's or agent's file reference<br>XA1822  | <b>FOR FURTHER ACTION</b>                                |  | See Form PCT/PEAA16 |
| International application No.<br>PCT/GB2004/004616   | International filing date (day/month/year)<br>01.11.2004 | Priority date (day/month/year)<br>05.11.2003 |                     |
| International Patent Classification (IPC) or national classification and IPC<br>G01S7/48, G01S7/481, G01S3/783 |  |  |                     |
| Applicant<br>MBDA UK LIMITED ET AL.  |  |  |                     |

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
  - ☒ sent to the applicant and to the International Bureau a total of 7 sheets, as follows:
    - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

- This report contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

|   |   |
|---|---|
| Date of submission of the demand<br><br>17.08.2005  | Date of completion of this report<br><br>08.02.2006   |
| Name and mailing address of the international preliminary examining authority:<br><br> European Patent Office - P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk - Pays Bas<br>Tel. +31 70 340 - 2040 Tx: 31 651 epo nl<br>Fax: +31 70 340 - 3016 | Authorized Officer<br><br>Devine, J<br><br>Telephone No. +31 70 340-3133<br><br> |

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2004/004616

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

**Description, Pages**

|         |  |
|---------|--|
| 3, 5-10 | as originally filed                              |
| 1, 2, 4 | received on 17.08.2005 with letter of 01.08.2005 |

**Claims, Numbers**

|      |  |
|------|--|
| 1-18 | received on 17.08.2005 with letter of 01.08.2005 |
|------|--|

**Drawings, Sheets**

|         |                     |
|---------|---------------------|
| 1/3-3/3 | as originally filed |
|---------|---------------------|

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2004/004616

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

|                               |             |      |
|-------------------------------|-------------|------|
| Novelty (N)                   | Yes: Claims | 1-18 |
|                               | No: Claims  |      |
| Inventive step (IS)           | Yes: Claims | 1-18 |
|                               | No: Claims  |      |
| Industrial applicability (IA) | Yes: Claims | 1-18 |
|                               | No: Claims  |      |

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

Reference is made to the following document/s/:

D1: US-A-4 674 874 (HALLDORSSON ET AL) 23 June 1987 (1987-06-23)

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The document D1 is regarded as being the closest prior art to the subject-matter of claim 17, and shows (cf D1, column 4, line 32 to line 56, figures):

A method of detecting an electromagnetic signal, comprising splitting the signal into a plurality of paths, delaying the passage of the split signal along some of the paths;

The subject-matter of claim 1 differs from this known method in that said signal is travelling from a nominal direction in space, and that there is combined the portion of the signal that leaves each of the paths and the combined signal is detected during a preselected limited period of time\*.

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The subject-matter of claim 17 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as extending the effective duty cycle of the detector while minimising the on time.

The solution to this problem proposed in claim 17 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

None of the cited prior art is considered to disclose these features \* of claim 17 such as to be a solution of the stated technical problem.

Claim 18 is dependent on claim 17 and as such also meets the requirements of the PCT with respect to novelty and inventive step.

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The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (cf D1, column 4, line 32 to line 56, figures):

A signal detection system comprising:  
an electromagnetic signal detector for detecting receipt of electromagnetic signals;  
at least two optical paths arranged to receive an electromagnetic signal and to transmit any received signal towards the signal detector;  
an optical time delay operative within one of the optical paths to delay transmission of any received signal towards the signal detector,

The subject-matter of claim 1 differs from this known system in the following features \*\*

- (i) receiving an electromagnetic signal from the same nominal direction in space
  - (ii) having a preselected limited duty cycle
  - (iii) the optical time delay is selected so that signals received during a time period outside the duty cycle of the detector are detected during a subsequent duty cycle of the detector.
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The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as extending the the effective duty cycle of the detector while minimising the on time.

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

None of the cited prior art is considered to disclose these features \*\* of claim 1 such as to be a solution of the stated technical problem.

Claims 2 -16 are dependent on claim 12 and as such also meet the requirements of the PCT with respect to novelty and inventive step.